

What is claimed is:

1. In a nuclear power plant, a method of controlling a steam generator feed water level, wherein a steam generator has an upper level tap corresponding to an upper level, a lower level tap corresponding to a lower level, the upper level tap and the lower level tap having a span there between, a maximum permissible feed water level positioned between said lower level and upper level taps, a structural component supported within the steam generator, and level sensor means for indicating water level between a first range limit and a second range limit, said sensor means being connected to at least said lower level tap comprising:
 - providing a measure of a delta-pressure variation at about the lower level tap attributable to the structural component;
 - calculating a measure of full feed water level as the upper level plus said measure of the delta-pressure variation;
 - calibrating said level sensor means to provide an output at said first limit corresponding to an input thereto representative of said measure of full feed water level; and
 - controlling said feed water level when said sensor means indicates that said high level setpoint has been reached.
2. The method of Claim 1 wherein said sensor means senses differential pressure and has inputs connected to said lower and upper taps, respectively, and comprising calculating the differential pressure for water level at said lower tap and calibrating said level sensor means to provide an output at said second range limit corresponding to water level at said lower tap.
3. The method of Claim 2 wherein said measure of the delta-pressure variation attributable to the structural component is the pressure variation experienced at maximum power.

4. The method of Claim 3 comprising calculating said bias amount as maximum pressure variation less riser span percentage times the pressure variation at full power.

- 5 5. The method of Claim 1 further comprising the steps of :

calculating a measure of velocity head at or about the lower level tap; and

calculating the measure of full feed water level as the upper level plus said measure of the delta-pressure variation, less the measure of velocity head.

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6. A method of monitoring a feed water level relative to a high level control threshold in a steam generator, said steam generator being operated with the feed water level between a lower level and an upper level, said high level control threshold being between said lower and upper levels, and having pressure sensing means subject to a structural component delta-pressure variation error, for measuring said feed water level, comprising:

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determining a first measure of the structural component delta-pressure variation corresponding to water at said upper level;

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determining a second measure of the structural component delta-pressure variation corresponding to water level at said control threshold level;

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calibrating said level sensing means to provide a maximum indication of water level at said upper level adjusted by said first measure, and to provide a minimum indication of water level corresponding to water level at said lower level; and

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determining said high level control threshold corresponding to water level at said control threshold level plus said second measure.

7. A method for monitoring the feed water level in a steam generator of a nuclear power plant so as to be able to control said feed water level relative to a maximum permissible feed water level, comprising the following steps:

5 positioning an upper tap on said steam generator above said
 maximum permissible feed water level and obtaining a
 reference level pressure corresponding to the water read
 at said upper tap;

10 positioning a lower tap below said maximum permissible feed
 water level and obtaining a lower tap pressure there from,
 said maximum permissible feed water level thereby being
 positioned at a given percentage of a span between said
 lower and upper taps;

15 providing a differential pressure sensor having an output range
 between lower and upper limits;

 calculating a first differential pressure between said reference
 level pressure and said lower tap pressure when steam
 water is at said lower tap, and calibrating said sensor to
 indicate said upper limit when said first differential

20 pressure is placed there across;

 calculating a second differential pressure between said
 reference level pressure and a net pressure calculated for
 water at said upper tap plus a pressure variation
 attributable to a structural component within the steam

25 generator at maximum power plant power, and calibrating
 said sensor to indicate said lower limit when said second
 differential pressure is placed there across;

 calculating a differential high level setpoint pressure as the
 difference between the reference pressure and a net
 pressure calculated as pressure at the lower tap

30 corresponding to water level at said maximum
 permissible feed water level plus an amount equal to the

structural component delta-pressure variation at
maximum pressure variation times span percentage; and
controlling water level as a function of the sensed differential
pressure compared to the high level setpoint differential
pressure.

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